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10/624,189	07/22/2003	Giuseppe Coppola	851,028	6847

7590

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EXAMINER

LYONS, MICHAEL A

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/624,189

Applicant(s)

COPPOLA ET AL.

Examiner

Michael A. Lyons

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Objections*

Claim 1 is objected to because of the following informalities: the words “shear interferometer” are unnecessarily bracketed by quotation marks. Appropriate correction is required.

Claim 6 objected to because of the following informalities: the word “with” in line 4 has a stray quotation mark after the word. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. There omitted structural cooperative relationships because the claim is merely a listing of the elements in the system. There is no explicit indication of the order of arrangement of these elements, nor how, if combined, they would function as the claimed system. Further explanation of the functionality

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of the claim, either in the dependent system claims or in the method claim, fail to satisfy this requirement.

Regarding claims 2 and 3, the phrases "for example" (or i.e.) and "can be" render the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

As to claim 12, a single claim that is directed to both an apparatus and a method for using the apparatus is indefinite. See MPEP § 2173.05(p).

#### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**Claim 12 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.** The claim is directed to both an apparatus and a method for using the apparatus. See MPEP § 2173.05(p).

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

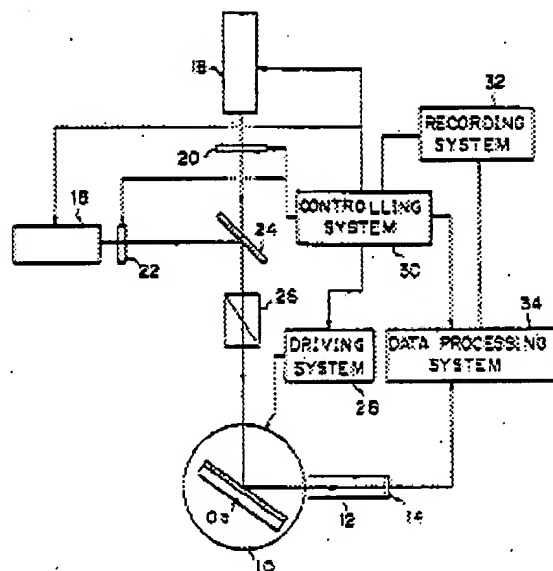
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1-6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isobe (5,034,617), as best understood by the examiner.**



Regarding claim 1, Isobe (Fig. 1) discloses a system for the measurement of refractive index comprising a laser 16, a precision rotating stage 10, a photodetector 14, and a data processing system 34 as a personal computer. The laser and computer are driven by controlling system 30, which acts as a supply for the laser.

Isobe, however, fails to disclose a collimating lens and an oscilloscope.

As for the collimating lens, Official Notice is taken that a collimating lens is well known for expanding a point beam into a larger parallel beam in interferometry in order to cover more of a sample. Further, Isobe discloses a recording system 32 in the form of a CRT tube; while this

is not explicitly an oscilloscope, they are functional equivalents as both will visually display the resulting interference fringe image from the measurement.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add a collimating lens and an explicit oscilloscope to the device of Isobe, the motivation being that the collimating lens will simply expand the input beam to allow for measurement of a broader portion of the sample during one pass without sacrificing function, while the oscilloscope will display the resulting interference image in the same manner as the current recording system.

As for claim 2, Isobe fails to disclose a single laser source that is driven by a supply means to change its emission wavelength. However, Isobe does disclose a pair of laser sources 16 and 18, each at a different wavelength, with shutters 20 and 22 that allow for selective use of a particular wavelength for a measurement. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a single laser that is frequency driven over the pair of lasers as per Isobe, the motivation being the single driven laser would be more compact than the pair of lasers and a pair of required shutters while providing the same functionality as the laser pair.

As for claim 3, Isobe discloses photodetector 14 and recording means 32.

As for claim 4, sample Ob to be measured is a substrate of Si on which a thin film of silicon dioxide is coated

As for claim 5, Isobe fails to disclose an explicit support for the substrate on the rotating stage. However, the use of an a substrate would be inherent to the operation of the system, and it would have been obvious to one having ordinary skill in the art at the time the invention was

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made to place the substrate in a support, the motivation being that without the support, when the stage rotates, there is no guarantee the substrate will remain in place; the support will ensure easily repeatable measurements.

As for claim 6, the light traveling within the sample and reflecting and refracting therein is inherent to the operation of the device, since without the light refracting and thereby slowing down within the sample, no phase shifting will occur to allow for the interference measurement needed to make the refractive index measurement.

As for claim 12, the substrate of Isobe is a solid, not a liquid. However, Official Notice is taken as to the well known use of interferometry to measure the refractive index of not only solids but liquids as well, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a liquid sample in place of the solid sample of Isobe, the motivation being that the use of a liquid sample is merely intended use, and measuring a solid or a liquid with the device of Isobe will both generate the desired result.

***Allowable Subject Matter***

Claims 7-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Also, claims 7-11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

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As to claims 7 and 11, the prior art of record, taken either alone or in combination, fails to disclose or render obvious the measurement of the thickness of the sample is performed by measuring the optical path of the system first, then obtaining the index of refraction of the sample from the optical path, these two values allowing for the determination of the thickness of the test sample, in combination with the rest of the limitations of the above claims.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Pat. 5,151,752 to Oono et al., US Pat. 5,355,218 to Matsuda, and US Pat. 6,496,268 to McKie et al.

Several facts have been relied upon from the personal knowledge of the examiner about which the examiner took Official Notice. Applicant must seasonably challenge well known statements and statements based on personal knowledge when they are made by the Board of Patent Appeals and Interferences. In re Selmi, 156 F.2d 96, 70 USPQ 197 (CCPA 1946); In re Fischer, 125 F.2d 725, 52 USPQ 473 (CCPA 1942). See also In re Boon, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice). If applicant does not seasonably traverse the well-known statement during examination, then the object of the well known statement is taken to be admitted prior art. In re Chevenard, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable during prosecution. Thus, applicant is charged with rebutting the well-known statement in the next reply after the Office action in which the well known statement was made.



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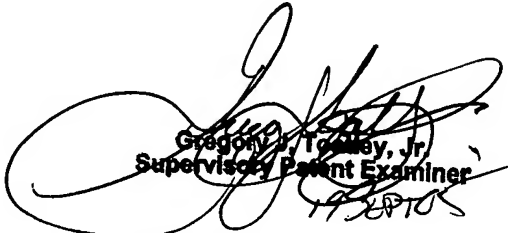
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 571-272-2420.

The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAL  
September 18, 2005

  
Gregory J. Toatley, Jr.  
Supervisory Patent Examiner  
19 SEP 2005